

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Kazumasa Inoue, et al.
Serial No.:	10/786,622
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For:	MULTI-FUNCTIONAL ADMIXTURES FOR CONCRETE
Group Art Unit:	1713
Examiner:	W. K. Cheung
Attorney Docket:	TKMT P127

DECLARATION UNDER 37 CFR § 1.132

Commissioner for Patents
Alexandria, Virginia 22313

Sir:

I, Mitsuo Kinoshita, declare as follows:

1. I am one of the joint inventors of the above captioned patent application.
2. I am familiar with the prosecution history of the above captioned patent application, inclusive of the Office Action mailed November 1, 2007 from the United States Patent and Trademark Office, as well as the document entitled Preliminary Amendment "I" mailed August 9, 2007 to the United States Patent and Trademark Office, in the above captioned patent application.

3. Since the application was rejected in view of four cited references, Kerkar, Ohta, Berke and Kloetzer in said Office Action mailed November 1, 2007, I have carried out the following experiments in order to examine the effects of replacing one or more of Components A, B and C of the present invention by what is disclosed in these cited references.

Firstly, I synthesized the following comparison samples:

AR-1 obtained by using copolymer M-1511 of Example II described by Kerkar in column 6 at lines 17-35 instead of Component A of the present invention;

AR-2 obtained by using Sample S02 of Preparation 4 described by Ohta in column 3 at lines 50-67 instead of Component A of the present invention;

AR-3 obtained by using Sample A(C) of Preparation 3 described by Ohta in column 3 at lines 32-49 instead of Component A of the present invention;

AR-4 obtained by using Sample B02 of Preparation 4 described by Ohta in column 3 at lines 50-67 and Table 1 instead of Component A of the present invention;

BR-1 which is polypropyleneglycol (MW=425) described by Berke in column 6 at lines 60-61 instead of Component B of the present invention;

CR-1 which is sodium salt of lauryl polyoxyethylene (5 mol) phosphate, corresponding to monoester of phosphoric acid described by Kloetzer in column 7 at lines 15-25 instead of Component C of the present invention;

CR-2 which is sodium salt of octylphenyloxyoctyl phosphate, corresponding to monoester of phosphoric acid described by Kloetzer in column 7 at lines 15-25 instead of Component C of the present invention; and

CR-3 which is sodium salt of octylphenyl polyoxyethylene (5 mol) phosphate,

corresponding to monoester of phosphoric acid described by Kloetzer in column 7 at lines 15-25 instead of Component C of the present invention.

Secondly, Reference Examples 1-10 (T-1-T-10) of mixture were prepared by using the samples AR-1 through CR-3 described above and as explained in Part 2 of the specification of the present application. Details of these Reference Examples 1-10 are summarized below in Table 2a where the same symbols that were used in Table 2 in the specification of the present application are used.

Table 2a

	Kind	Component A (kind/ratio(part))	Component B (kind/ratio(part))	Component C (kind/ratio(part))
Reference Example:				
1	T-1	AR-1/50	b-1/49	c-1/1
2	T-2	AR-2/50	b-1/49	c-1/1
3	T-3	AR-3/50	b-1/49	c-2/1
4	T-4	AR-4/50	b-1/49	c-2/1
5	T-5	a-1/50	BR-1/49	c-1/1
6	T-6	a-1/50	b-1/49	CR-1/1
7	T-7	a-1/50	b-1/49	CR-2/1
8	T-8	a-1/50	b-1/49	CR-3/1
9	T-9	AR-1/50	BR-1/49	CR-1/1
10	T-10	AR-2/50	BR-1/49	CR-1/1

Next, the mixtures T-1 through T-10 were used to prepare concrete samples of Reference Examples 11-20 as explained in Part 3 of the specification of the present application. Details of these samples and the results of their evaluation are shown below by using Tables 4a and 5a. Tables 4a and 5a correspond respectively to Tables 4 and 5, using the same symbols.

Table 4a

	Admixture		Property of concrete				
	Kind	Added amount *6	Immediately after kneading		90 minutes later		Slump loss (%)
			Slump (cm)	Air quantity (%)	Slump (cm)	Air quantity (%)	
Reference Example:							
11	T-1	0.38	18.2	4.5	13.4	4.2	73.6
12	T-2	0.43	18.5	4.8	13.5	4.0	73.0
13	T-3	0.36	18.7	4.7	13.1	4.2	70.0
14	T-4	0.40	18.3	4.6	13.4	4.1	73.2
15	T-5	0.32	18.4	4.8	13.2	4.4	71.7
16	T-6	0.33	18.6	4.9	13.4	4.3	72.0
17	T-7	0.35	18.0	4.6	13.0	4.0	72.2
18	T-8	0.33	18.3	4.8	13.2	4.1	72.1
19	T-9	0.41	18.5	4.6	13.3	4.3	71.9
20	T-10	0.43	18.5	4.8	13.4	4.4	72.4

Table 5a

	Properties of admixture				
	Shrinkage ($\times 10^{-4}$) at 26 weeks	Durability against freezing and thawing action (300 cycles)	Accelerated carbonation depth (mm)	Compressive strength	
				Age = 7 days	Age = 28 days
Reference Example:					
11	5.4	73	10.8	36.0	49.1
12	5.4	70	10.7	36.4	49.5
13	5.3	72	10.9	36.2	49.2
14	5.5	68	10.8	36.2	49.3
15	5.4	62	11.0	36.0	49.0
16	5.2	55	11.0	36.3	49.2
17	5.2	41	11.0	36.4	49.5
18	5.2	43	11.0	36.2	49.0
19	5.3	61	11.0	36.0	49.0
20	5.2	52	11.0	36.1	49.0

I conclude from the results shown in Tables 4a and 5a as compared with those in

Table 4 and 5 that the samples which use components other than the components according to the present invention do not have the favorable characteristics, especially regarding slumps and durability against freezing and thawing action.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both (under Section 1001 of Title 18 of the United States Code), and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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January 22, 2008
Date